

**Assignment -1**  
Python Programming

Assignment Date	17 September 2022
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Maximum Marks	2 Marks

**Question-1:**

Make a smart home in tinkercad using 2 sensors,LED,Buzzer in single code and circuit.

**Solution:**

```
#include<Servo.h>

const int pingPin = 7;

int servoPin = 8

Servo servo1;
void setup() {

  // initialize serial communication:

  Serial.begin(9600);

  servo1.attach(servoPin);

  pinMode(2,INPUT);

  pinMode(4,OUTPUT);

  pinMode(11,OUTPUT);

  pinMode(12,OUTPUT);

  pinMode(13,OUTPUT);

  pinMode(A0,INPUT);

  digitalWrite(2,LOW);

  digitalWrite(11,HIGH);

}

void loop() {
  long duration, inches, cm;
```

```
pinMode(pingPin, OUTPUT);
digitalWrite(pingPin, LOW);
delayMicroseconds(2);
digitalWrite(pingPin, HIGH);
delayMicroseconds(5);
digitalWrite(pingPin, LOW);
  pinMode(pingPin, INPUT);
  duration = pulseIn(pingPin, HIGH);

  // convert the time into a distance
  inches = microsecondsToInches(duration);
  cm = microsecondsToCentimeters(duration);

  servo1.write(0);
  if(cm < 40)
  {
    servo1.write(90);
    delay(2000);
  }
  else
  {
    servo1.write(0);
  }
```

```
// PIR with LED starts int
pir = digitalRead(2);

if(pir == HIGH)
{
    digitalWrite(4,HIGH);
    delay(1000);
}
else if(pir == LOW)
{
    digitalWrite(4,LOW);
}

//temp with fan
float value=analogRead(A0);
float temperature=value*0.48;

Serial.println("temperature");
Serial.println(temperature);

if(temperature > 20)
{
    digitalWrite(12,HIGH);
    digitalWrite(13,LOW);
}
else
{
    digitalWrite(12,LOW);
    digitalWrite(13,LOW);
}
```

```
}  
}
```

```
long microsecondsToInches(long  
  microseconds) {return microseconds / 74 / 2;  
}
```

```
long microsecondsToCentimeters(long  
  microseconds) {return microseconds / 29 / 2;  
}
```

**Output:**

